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Demographic Analysis on 2020 Fatal Overdose Deaths in Orange County, FL

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The Orange County Unintentional Overdose Mortality Review (UOMR) team has three main goals. These are: 1. Reduce Mortality 2. Examine Treatment Options and 3. Prevent New Users In support of the first goal, ISBS has analyzed 2020 Medical Examiner data from Orange County to identify demographic differences in fatal overdoses. This information can be used to identify risk factors for fatal overdoses and target interventions that will lead to reduced mortality.

We have conducted analysis to identify differences based on sex, race, and income.

Differences Based on Sex

As shown in Table 1, there was virtually no difference in age with the mean age for both men and women around 42 years. The age range for men is 19 to 73 while for women it is 15 to 72 years of age.

We were able to gather Estimated Household Income from 2019 census tract data from the Federal Financial Institutuations Examination Council, there were 46 individuals that did not have census tract data information due to residences residing outside of the United States or no home residence listed at time of deaths. In terms of estimated household income levels, women did come from areas with lower estimated HH incomes overall. Estimated HH income was determined by the individuals home address. The most current census tract data was used to find estimated HH income.

Table 1. Age, Estimated HH Income by Sex

	N	Mean	Std. Deviation
Age			
Male	351	42.25	12.691
Female	98	42.28	13.022
Estimated HH Income			
Male	321	68,102.10	29,938.598
Female	82	59,622.25	28,972.277

Similarly, women were more likely to come from areas with average HH incomes below the median level and nearly twice as likely to have no census tract information at the time of their death (Table 2).

Table 2. Cross Tabulation Below Median Income for Orange County and Sex

Below Area Median Income (BAMI)	Female		Male		Total	
	n	%	n	%	n	%
BAMI Yes	56	57.1	188	53.6	244	54.3
BAMI No	26	26.5	133	37.9	159	35.4
No Census Tract	16	16.3	30	8.5	46	10.2
Total	98	100	351	100	449	100

Like age, there was virtually no difference in having a history of incarceration with nearly 60% of both men and women having been incarcerated in the Orange County jail at least once prior to their death (Table 3).

Table 3. Cross Tabulation Incarcerated Individuals and Sex

Incarcerated	Female		Male		Total	
	n	%	n	%	n	%
Yes	59	60.2	212	60.4	178	39.6
No	39	39.8	139	39.6	271	60.4
Total	98	100	351	100	449	100

Opioids as the primary drug were the largest cause of death, accounting for nearly 66% of deaths in Orange County in 2020. There was a distinction in percentage of deaths with men being more likely to die of opioid use while women had a higher percentage of cocaine and stimulant related deaths (Table 4).

Table 4. Cross Tabulation Primary Drug Causing Death and Sex

Primary Drug	Female		Male		Total	
	n	%	n	%	n	%
Opioid	55	56.1	240	68.4	295	65.7
Cocaine	23	23.5	61	17.4	84	18.7
Alcohol	6	6.1	28	8.0	34	7.6

Benzodiazepine	4	4.1	9	2.6	13	2.9
Stimulant	5	5.1	6	1.7	11	2.4
Synthetic Cannabinoid	0	0	3	0.9	3	0.7
Tylenol	2	2.0	0	0	2	0.4
N/A	3	3.1	4	1.1	7	1.6
Total	98	100	351	100	449	100

Comparatively both sexes had an opioid present at death in over three quarters of the cases. For men it was almost 85% while for women it was nearly 79%. In total, 84% of deaths had some form of opioids involved (Table 5).

Table 5. Cross Tabulation Opioid Present and Sex

Opioid Present	Female		Male		Total	
	n	%	n	%	n	%
Yes	77	78.6	298	84.9	375	83.5
No	21	21.4	53	15.1	74	16.5
Total	98	100	351	100	449	100

Differences Based on Race

As shown in Table 6, the data we have only allows us to analyze race and not ethnicity. The racial categories were Black/ African American, White, Vietnamese, Other Asian, and Other. Oher Asian and Vietnamese were grouped into the Other category. Approximately 75% of Black/African Americans and the people in the Other category that died during this period of time were below the HH Area Median Income of Orange County which was $68,100. While around 57% of White individuals were below the AMI of Orange County (Table 6).

Table 6. Cross Tabulation Below Median income Orange County and Race

Below Median Income	Black/African American		White		Other		Total	
	n	%	n	%	n	%	n	%
Yes	50	72.5	177	56.5	17	77.3	244	60.4
No	19	27.5	136	43.5	5	22.7	160	39.6

Total	69	100	313	100	22	100	404	100

Overall, nearly 40% of the individuals had been incarcerated in the Orange County jail at least once prior to their death. White individuals were incarcerated at 39% of the time while Black/African American individuals were incarcerated 47% of the time and Others 22% (Table 7). Black/African Americans are almost 10% more likely to be incarcerated over White individuals and over 20% than people in the Other race category.

Table 7. Cross Tabulation Incarceration and Race

Incarcerated	Black/ African American		White		Other		Total	
	n	%	n	%	n	%	n	%
Yes	34	47.2	139	39.4	5	21.7	178	39.7
No	38	52.8	214	60.6	18	78.3	270	60.3
Total	72	100	353	100	23	100	448	100

Opioids are the primary cause of death for all three races with white individuals having some sort of opioid present at death almost 90% of the time compared to Black/African Americans and those categorized as other having an opioid present at death less than 70% of the time (Table 8).

Table 8. Cross Tabulation Opioid Present at Death and Race

Opioid Present	Black/ African American		White		Other		Total	
	n	%	n	%	n	%	n	%
Yes	45	62.5	313	88.7	16	69.6	374	84.5
No	27	37.5	40	11.3	7	30.4	74	16.5
Total	72	100	353	100	23	100	448	100

There is virtually no difference in Black/African American opioid death and race Other opioid death at around 48% while white opioid death was 71%. Cocaine was the second deadliest substance with Others and Blacks/African Americans dying of it as a primary cause 40% and 26% respectively (Table 9).

Table 9. Cross Tabulation Primary Drug Death and Race

Primary Drug Death	Black/ African American		White		Other		Missing		Total	
	n	%	n	%	n	%	n	%	n	%
Opioid	34	47.2	250	70.8	11	47.8	0	0	295	65.7
Cocaine	19	26.4	55	15.6	9	39.1	1	100	84	18.7
Alcohol	13	18.1	20	5.7	1	4.3	0	0	34	7.6
Stimulant	0	0	11	3.1	0	0	0	0	11	2.4
Benzodiazepine	2	2.8	11	3.1	0	0	0	0	13	2.9
Synthetic Cannabinoid	2	2.8	0	0	1	4.3	0	0	3	0.7
Tylenol	1	1.4	1	0.3	0	0	0	0	2	0.4
NA	1	1.4	5	1.4	1	4.3	0	0	7	1.6
Total	72	100	353	100	23	100	1	100	449	100

Generational Differences

Generations are defined by the Pew Research Center as Baby Boomers year born 1946- 1964, Generation X year born 1965-1980, Millennial's year born 1981-1996, and Generation Z year born 1997-2012. Analysis was run to better understand generational difference. Table 10 shows that each generation had more than 50% of individuals living below the Area Median Income with the Baby Boomer generation having the largest percentage of individuals below the Area Median Income at 67%.

Table 10. Cross Tabulation Below Median Income (OC) and Generation

Below AMI	Baby Boomers		Generation X		Millennials		Generation Z		Total	
	n	%	n	%	n	%	n	%	n	%
Yes	55	67.1	81	56.3	95	62.5	13	50	244	60.4
No	27	32.9	63	43.8	57	37.5	13	50	160	39.6
Total	82	100	144	100	152	100	26	100	404	100

Millennials and Generation Z had 91% and 93% of deaths involve opioids. This is the highest of the generations and shows that younger people are dying with opioids in their system far more than that of the older generations (Table 11.)

Table 11. Cross Tabulation Opioids present at death and Generation

Opioids Present	Baby Boomers		Generation X		Millennials		Generation Z		Total	
	n	%	n	%	n	%	n	%	n	%
Yes	72	74.2	132	80.5	146	90.7	25	92.6	375	83.5
No	25	25.8	32	19.5	15	9.3	2	7.4	74	16.5
Total	97	100	164	100	161	100	27	100	449	100

However, the primary death among Generation Z is 59% opioids compared to that of millennials at 73%. This suggests that while opioids are a cause of concern that younger generations might be unaware of the opioids within their other drugs (Table 12.).

Table 12. Cross Tabulation Primary Drug Death and Generation

Primary Drug death	Baby Boomers		Generation X		Millennials		Generation Z		Total	
	n	%	n	%	n	%	n	%	n	%
Opioid	55	56.7	107	65.2	117	72.7	16	59.3	295	65.7
Cocaine	25	25.8	34	20.7	21	13	14	14.8	84	18.7
Alcohol	7	7.2	15	9.1	10	6.2	2	7.4	34	7.6
Stimulant	4	4.1	2	2.5	4	2.5	1	3.7	11	2.4
Benzodiazepine	4	4.1	1	0.6	4	2.5	0	0	13	2.9
Synthetic Cannabinoid	0	0	1	0.6	2	1.4	0	0	3	0.7
Tylenol	1	1	1	0.6	0	0	0	0	2	0.4
NA	1	1	3	1.8	3	1.9	0	0	7	1.6
Total	97	100	164	100	161	100	27	100	449	100

Differences based on Homelessness

There were 43 deaths that involved the individual being homeless. We categorized individuals as homeless through their home address given; in some cases, the individual was listed as homeless or transient however the majority of the 43 had nothing listed under home residence.

Overall, around 10% of the individuals were homeless. This was a much more common fate among women with 16% of females were being homeless to 8% of males (Table 13).

Table 13. Cross Tabulation Homelessness and Sex

Homeless	Female		Male		Total	
	n	%	n	%	n	%
Yes	16	16.3	27	7.7	43	9.6
No	82	83.7	324	92.3	406	90.4
Total	98	100	351	100	449	100

Race has almost three times the impact on homelessness. Black/African Americans and Others have around a 4% homelessness rate while White individuals are at almost 11%. The majority of the 43 homeless individuals are White (Table 14).

Table 14. Cross Tabulation Homelessness and Race

Homeless	Black/ African American		White		Other		Total	
	n	%	n	%	n	%	n	%
Yes	3	4.2	38	10.8	1	4.3	43	9.6
No	69	95.8	315	89.2	22	95.7	406	90.4
Total	72	100	353	100	23	100	448	100

Of the four generations that appear within this sample Baby Boomers and Generation X are those that show up to be homeless. Both younger generations, Millennials and Generation Z have less than 5% of their total generation represented as homeless (Table 15). However, Baby Boomers have almost 16% of their generation homeless while Generation X is at around 12%.

Table 15. Cross Tabulation homelessness and Generation

Homeless	Baby Boomers		Generation X		Millennials		Generation Z		Total	
	n	%	n	%	n	%	n	%	n	%
Yes	15	15.5	19	11.6	8	5.0	1	3.7	43	9.6
No	82	84.5	145	88.4	153	95.0	26	96.3	406	90.4
Total	97	100	164	100	161	100	27	100	449	100

The Role of Fentanyl

Fentanyl was in the system of individuals 77% of times during this time period (Table 16). This does not mean that the primary drug that caused the overdose was fentanyl, but that fentanyl was in the system of the individual at the time of death. From a generational standpoint, Baby Boomers had the lowest percentage of fentanyl involved death at 64% while Generation Z and Generation X had the second lowest percentages of fentanyl involved death among their group at around 74%. Millennials had the most deaths of the 342 that included fentanyl and the highest percentage of death among their generation with 86% of the generation having died with fentanyl involvement (Table 16).

Table 16. Cross Tabulation Fentanyl involvement and Generation

Fentanyl Involvement	Baby Boomers		Generation X		Millennials		Generation Z		Total	
	n	%	n	%	n	%	n	%	n	%
Yes	62	63.9	122	74.4	138	85.7	20	74.1	342	76.7
No	35	36.1	42	25.6	23	14.3	7	25.9	107	23.8
Total	97	100	164	100	161	100	27	100	449	100

Conclusion

The information we have been able to analyze show that the majority of those that died in 2020 in Orange County, Florida are White (78%) and male (78%). The average age of the sample was around 42 years old with a standard deviation of 12 years for men and 13 years for women. The average age of both sexes had virtually no difference (Table 1). The youngest death was a 15-year-old female while the oldest death was a 73 year old male. Homelessness is more of a risk factor for whites, women, and those in the Baby Boomer generation. Incarceration is more of a risk factor for Black/African American individuals while both genders were almost equally at risk for incarceration (Tables 7, 3, respectively). Fentanyl was present in almost 77% of

accidental overdose deaths in 2020 in Orange County. Generationally, over 50% of each cohort died with fentanyl in their system. However, those at most risk are Millennials as around 86% of the deaths within their generation had fentanyl present (Table 16).